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SUBJECT Voroshilovgradugol and Donbasugol-Coal Combines

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2. The Donbasugol Combine controlled the trusts of Artemugol, located in Gorlovka; Kalininugol, located in Kalinovo; Sovetsbugol, located near the station of Khanzhenkovo; Chistyakovugol, located in Chistyakova; Snezhnyanatratsit, located at the station of Sofino-Brodsкая; Stalinugol; Makeyevugol; Budenovugol; Rutchenkovugol; Krasnoar-Meyskugol and Dzerzhinskugol.
3. The Voroshilovgradugol Combine controlled the trusts of Ordzhonikidzeugol, located in Verovka; Lisichanskugol, located in Lisichansk; Kaganovichugol; Kadiyevugol, located in Kadiyevka (Sergo); Voroshilovskugol, located between the station of Kipuchaya and the town of Alchevsk (Voroshilovsk); Voroshilovgradugol, located in Lugansk; Krasnodonugol or Sorokinugol, located in Krasnodon; Donbasantratsit, located on the edge of Krasnyy-Luch; Bokovo-Antratsit, located near the station of Zheleznaya; and Sverdlovugol, located in Sverdlovsk.

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4. The Rostovugol Combine was located to the extreme east. It was comprised of the trusts of Shakhtantratsit, Bogurasugol, and the mines of the new rayon of Donbas.
5. Under the Soviet regime the mines were referred to by numbers, especially in Gorlovka where the mines imeni Lenin were called Mine #5 and Mine #6. Coal mines were called according to the purpose they served i.e. the mines through which coal was hoisted were called hoisting mines, and the ones through which the polluted air was pumped out were called ventilation mines. In earlier days (1933-38) the ventilation mines used to be 75 meters shallower than normal, and later (1940-43) they were 100 meters shallower.

[Available from the CIA Map Library is a map on Voroshilovgrad M-37-11 AMS Series N-501 scale 1:250,000 which has been marked to show the locations of the trusts and coal mines under the control of the Voroshilovgradugol and Donbasugol Coal Combines. *

6. The mines controlled by each trust were as follows: (the number preceding the mine indicates its location on the annotated map).

A. Donbasugol Combine

I. Artemugol (Artem Coal Trust)

1. Gorlovka #1
2. Gorlovka #5 (Imeni Lenin)
3. Novogorlovka #8
4. Novogorlovka #9
5. Kondrat'yevka
6. Aleksandra Zapad
7. & 8. Small unnamed mines
9. Podzemgaz

II. Kalininugol (Kalinin Coal Trust)

30. Bayraskiy (Kalinovo)
31. Novo-Kondrat'yevka
32. Rumyantsevo
33. Gigant
- 34, 35, & 36. Small unnamed mines

III. Sovetskugol (Sovetsk Coal Trust)

77. 13-bis
78. Buros (Kirovo)
79. Mine #8 near the station of Nizhnyaya Krynka.
80. Nizhnyaya Krynka
81. Unnamed mine 2½ kilometers from the station of Khanzhenskovo
- 82 & 83. Unnamed mines near Makeyevka
84. 3-bis

IV. Chistyakovugol (Chistyakova Coal Trust)

85. Mine #4
86. Krasnaya Zvezda
- 87 & 88. Two small unnamed mines
89. Kislovka
- 90, 91, & 92. Small unnamed mines
93. Katik
94. Zuyevka
95. Ol'Khovchik

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- V. Snezhnyanantsit Trust
- 96. Amerikanka
 - 97, 98, & 99. Novyy Donbas Group
 - 100. Small unnamed mine
- B. Voroshilovgradugol Combine
- I. Ordzhonikidzeugol (Ordzhonikidze Coal Trust)
- 10. Sofiyevka ("Karl Marx")
 - 11. Verovka (Krasnyy Profintern)
 - 12. Bunge (Yunyy Kommunar)
 - 13. Gidrosakhta
 - 14. Krasnyy Oktyabr
 - 15. Narnevka
 - 16, 17, 18 & 19. Small unnamed mines
- II. Lisichanskugol (Lisichansk Coal Trust)
- 20. Rukhimovich
 - 21. Mel'nikovo
 - 22. Titovka
 - 23. Tomashevka
 - 24. Chernomorka
 - 25. Yevgen'yevka
 - 26. Voykovo
 - 27 & 28. Small unnamed mines
 - 29. Podzemgaz
- III. Kaganovichugol (Kaganovich Coal Trust)
- 37. Gorsko-Ivanovskiy
 - 38. Zolotoye
 - 39. Karbonit
 - 40. Toshkovka
 - 41. Pervomaysk (Mariya)
 - 42. Golubovka
 - 43, 44, & 45. Small unnamed mines
- IV. Kadiyevugol (Kadiyev Coal Trust)
- 46. Kadiyevka (Sergo)
 - 47. Bryansk
 - 48. Krivorozh'ye
 - 49. Irmino
 - 50 & 51. Small unnamed mines
- V. Voroshilovskugol (Voroshilovsk Coal Trust)
- 52, 53, 54, & 55. Parizhsкая Kommuna (Seleznsкая group)
 - 56. Artem #10
 - 57. Del'ta
 - 58. Lotikovo
 - 59 & 60. Small unnamed mines
- VI. Voroshilovgradugol * (Voroshilovgrad Coal Trust)
- 61. Uspenskaya #70
 - 62. Voroshilovka

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- 63. Zapadiy
- 64, 65, & 66. The Uspenskaya group
- 67 & 68. Small unnamed mines

* There were also a group of mines called "Prinudshakhta" located between Rozalinovka and Znamenka. These were manned entirely by convicts.

VII. Krasnodonugol or Sorokinugol (Krasnodon Coal Trust)

- 69. Sorokino
- 70. Uralo'kavkaz
- 71. Izvarino
- 72. Mine #12 (west of the trust)
- 73. Krasnodon
- 74, 75, & 76. Small unnamed mines

VIII. Donbasantratsit Trust

- 101. Khrustal'naya
- 102. Karl
- 103. Krasnyy Luch
- 104. Bokovo
- 105, 106, 107, & 108. Small unnamed mines

IX. Bokovo-Antratsit Trust

- 109. Bokovskiy
- 110-118. Small mines in the neighborhood of the station of Shchetova (both east and west).

X. Sverdlovugol Trust

- 119. Dzerzhinka
- 120. Volodarka
- 121. Voykovo
- 122. Mines #14 & #17.
- 123. Shvartsevka
- 124. Mine #5 (Tsentsosoyuz)

7. The depth of shafts in the mines differed. When the top layer of a deposit was exhausted (usually in about 5 to 7 years) work was then begun on seams lying deeper. The average depth was about 330 meters. The deepest mine, Smolyanka of the Stalinugol Trust was 1,000 meters deep. Gorlovak #1 (1) was approximately 640 meters deep. Shcherbinovka of the Dzerzhinskugol Trust was 575 meters. Novo-Kondrat'yevka (31) was 225 meters deep, and a newer shaft of the Novo-Kondrat'yevka was 345 meters. Chernomorka (24) was 145 meters while Rukhimovich (20) was 195 meters. The latter two had in addition inclined passages that contained eight passages each. (Seam #7 of the Rukhimovich is an example). Chernomorka had a central inclined passage from which a fifth face was being mined.
8. The Donbas had 200 layers of which only 40 were suitable for development. They were 0.5 to 2.20 meters in thickness. The Shchetova mine had seams 3 meters thick but this was only a temporary phenomenon (swollen). Workable mines for the most part contained coal seams of 0.75 to 1.10 meters in thickness.

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9. As a rule mining was done by the pillar and stall method. Where the dip of the seam was more than 45° , the seam was extracted by means of roof caving. Where the dip was less than 45° , the seam was removed with complete or partial backfilling. The material for backfilling was taken mostly from the floor and not from the ceiling (roof).
10. Inclined passages were used on seams of gentle slope (up to 45°), and in exceptional cases greater than 45° . In the eastern section of the Rukhimovich mine on Seas #7 there was an inclined passage that dipped up to 58° . Chutes were used on steep slope seams (over 45°). On seams of gentle slope, propping of faces was done with wooden frames and also at the edge (top or bottom) if it was necessary. On steep slope seams an additional organpipe supporting (chocks-cages) structure of two or three rows was employed. Pine and sometimes oak was used. However, "safety regulations" strictly prohibited the use of oak on faces. There were also various new supports of concrete and metal, but these were only in the stage of improvement. Underneath ventilation passages and above the hauling or loading passage, pillars were left in the shape of rectangles (4 x 6 meters).
11. Cutting machines were used on seams up to 15° and coal was transported to the passages by conveyors or scrapers. The use of pneumatic drills, however, was more common. Here, coal was piled up under the influence of its own weight and guided in the right direction by wooden chutes.
12. The difficulties encountered in the process of mining a useful deposit were both geological and technical. The geological difficulties were: (a) a change in the thickness of a seam; (b) faults, dislocation of a seam along the normal; (c) flexures, a turn of the seam without tearing (a rare phenomena); and (d) a continuous moisture in the form of rain (drip) coming down from the ceiling in some seams. Among the technical difficulties there were: (a) maintenance of the ceiling; (b) temperature; (c) gases; (d) limitations of the rolling stock (especially if the underground track was too long); (e) small range capacity of the mine car; (f) limited number of reserved faces; (g) slow progress of preparatory work; (h) shortage and unsuitable measurements of wood for propping cleared area; and (i) continuation of work without interruption, leaving no time to make repairs on the track. Examples of mines with too long trackage were Smolyanka and Vetka of the Stalinugol Trust; Buros and Sofiya of the Makeyevugol Trust; Gorlovka (1), Shcherbinovka, Sofiyevka (10), and Verovka (11).
13. The Donbas Combine was supposed to produce 250,000 tons per day, but up to 1943 the best daily production was 235,000 tons. Often only 150,000 to 170,000 tons were produced. Kondrat'yevka (5) produced 1800 tons per day, Gorlovka #1 (1) 3400 to 3800 tons per day, Sofiyevka (10) 3200 tons, and Smolyanka, 800 tons. Occasionally Smolyanka production would not exceed 250 tons.
14. Production figures of coal were compiled on the basis of the amounts hauled to the surface. The total for the mines was corrected on a basis of the number of railroad cars loaded. The railway authorities received payment for the service of clearing cars. Failures to meet production quotas were sometimes concealed, especially when railroad cars were not available on time. The coal was then dumped into piles. The amount in the piles was often overestimated to hide production quota failures. When the coal ignited by spontaneous combustion, the amount burned could be written off. When it was necessary to make a report on coal production with a view to propaganda, both for domestic and foreign purposes, then usually the figures were juggled by dishonest auditors. Another reason why production quotas were not met was, after a mine was worked for a certain period, the upper layers of coal would begin to press heavily on the mined area up to the face itself. As a result

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an avalanche would occur. In order to avoid such an avalanche, large seams of coal often had to be abandoned. In 1937 at the Kondrat'yevka Mine (5), Mazur seam No. 9 (mined by machinery) a layer of coal 150 meters in length, 110 centimeters thick with 60 centimeters of pyrite on top was abandoned. Every month 1,000 to 1,500 tons of good coal from this mine alone was thus relegated. The same happened at Mine No. 10, on seam #5, where a layer of coal 57 centimeters thick was abandoned.

15. The role of the engineer was the same as that of a common workman. He was not given sufficient time to think out his technical problems. He was compelled to do what the Party dictated even though it was contrary to his experience and education. Most of the engineers did not favor the adopted ~~plans~~ but carried on their work in a well thought out and consistent manner, according to established procedures.
16. Each level of the mine area was exhausted in five to seven years. Provisions had to be made in advance for the preparation of new faces and new levels. This resulted in a decrease in the production of coal and caused open friction between the Party group and the technical personnel (to the demands to produce the necessary quotas). The engineer's answers were that they had carried out preparations for work but had not been given the necessary workmen, time and funds (1938). The opening of new levels required a long period of time. The Party clique could not wait and always demanded more and more coal. Consequently, during the years 1935 to 1938 the most learned engineers who honestly defended their technical opinions were arrested. They were punished more severely than a workman for a similar crime. The engineers fled wherever they could and many could be found at stud farms, fruit canning plants, etc. Only those remained who knew how to conceal their technical opinions, or were members of the Party. The Party clique relied more and more on young engineers.
17. Pressure was increased on the engineers when the roof of a mine had deteriorated. The ordinary passages were not strong enough to withstand pressure, because the workmen had hurried and did not build them well. The partial caving of roofs in such circumstances had not yet (1940) become a general practice although some of the engineers had some knowledge of this system.
18. The Budenovogol Trust, which was managed by a Party engineer who was interested only in getting out more coal, overlooked repairs to excavations and made no expenditures to improve the situation. Later, the engineers of the Budenovogol Trust began to use the English system of timbering.
19. In slightly dipping deposits, layers were subdivided by sloping passages and not by shafts, the construction of which required a long time because of the necessary expansion of the underground track. A complete run by the underground trolley at the "Buros" mines required a full hour. Inadequate supervision of underground tracks caused damages both to electric engines and to the cables. Preliminary works (drifts) lagged behind the clearing process (faces) which made it possible to prepare only one trolley and only one trolley run or to lay the empty trolley to one side, which was also a slow operation. In 1941, a mad campaign of arrests of workers (former Kulaks) occurred at the mines. Production dropped from 1800 to 1200 tons per day at the Kondrat'yevka Mine (5). On the basis of average production of three tons per workman per day, the arrest of a hundred workmen amounted to a loss of 300 tons per day. In Mine No. 8 (79) of the Sovetskugol Trust more than 70 men were arrested resulting in the loss of 210 tons.

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20. The Donbas coal was earmarked for heavy industry, (machine building, electrical, metallurgical, chemical, textile, etc.), water and railroad transport, fuel for the cities, and was also the principal fuel for the electric power stations. Better qualities of coal, both bituminous and anthracite, were exported to Italy and other countries.
21. The Donbas Basin coal was classified as: lean, long flame, gas, coking, steam caking, and coal for maritime purposes. Coal for maritime purposes was characterized by its high heat producing capacity. It ignited readily, gave off very little smoke, and its carbon content was 93 to 95%. Deposits were at Bokovo-Antratsit terminating at Shakhtinskiy rayon. Steam caking coal while aflame, was very good for heating water. It was primarily used by locomotives. The deposits were in the northern walls of the anticline Kondrat'yevka (5), Aleksandra'Zapad (6), and other mines. Long-flame coal was used in furnaces with large combustion space. Its carbon content was 89-91%. Deposits were located in the Lisichanskiy rayon. Gas coal, which produced a high percentage of gases, was used to supply power for factories. The Smolyanka mine partially supplied the Stalin Metallurgical Plant with gas coal. Lean coal, whose heat quality was not too high, was found in many places in the Donbas, particularly in the Sovetskugol rayon. Coking coal deposits were found in Voroshilovskugol and Kadiyevugol Trusts and also in the so-called Tsentral'nyy (central) rayon. Principle consumers of the coking coal in the Ordzhonikidze Trust was the Ordzhonikidze Yenakiyevo Metallurgical Plant and the Ordzhonikidze coke and chemical factory.
22. Carbon dioxide, hydrogen sulfide, sulfur dioxide, and methane were encountered in Donets Basin coal mines. All of the mines were divided into four categories depending upon methane concentration. The first category consisted of mines which had less than 0.5% of CH_4 in the mine air or 3 cubic meters liberated per ton of extracted coal; the second category those which had from 3 to 9 cubic meters liberated per ton of coal; the third category those which had from 9 to 18 cubic meters of CH_4 per ton; and the fourth, more than 18 cubic meters per ton. Aleksandra'Zapad (6), belonged to category #1, Rukhimovich (20) and Katik (93) to category #2, Sofiyevka (10), Verovka (11), Bayrakskiy (30), and Budenovugol to category #3, and Gorlovka #1 (1) to category #4.
23. Technical measures and diligent supervision to control gases in the mines depended on the type of management. One measure was to make certain that the air had no less than 19% oxygen. This was one of the best ways to combat gas where methane continued to be formed. It was found necessary to keep the air in subsidiary faces in normal condition even when there were no miners present.
24. Not all the mines could be kept at this level. Sometimes analysis indicated a methane content of 17 or even 18.3% as in Novogorlovka #8 (3) where a sample was taken near the ventilation drift. In this case the coal was very hard and the miners made loading platforms with a charging hole in order to fulfill their quotas. The increased gas pressure would blow out large quantities of coal thus assisting the miners with their production. This, of course, was done in secrecy as it was extremely dangerous.
25. Gas was discharged normally, through a gas feeder, and/or in sudden ejections. The gas feeder discharge was most dangerous because it was unforeseen. It was very strong but steady. When gas had concentrated in pockets under great pressure, it threw out large quantities of coal.
At the Verovka mine (11) at layer 4 (Severnnyy) within the period of one hour there were two ejections of coal. The first was 600 tons at the head of the drift near the stove and the second 800 tons at about the middle of the bench.

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26. Oxamaethane ($\text{NH}_2 \text{ CO CO}_2 \text{ C}_2 \text{ H}_4$) was also present in certain mines and was very dangerous because it exploded like methane. However, there weren't very many explosions from this cause. During the period 1933-1943 there were only six. Prior to 1930 there was an explosion at Shcheglovka Mine of the Makeyevugol Trust. One Sunday at the Shcheglovka Mine (at that time Sunday was not a work day) a careless watchman lit a cigarette near the shaft where the Oxamaethane had accumulated, which resulted in an explosion. Later, the rules for safety forbade the lighting of fire at a distance of 50 meters from a shaft.
27. The Sofievka (10) and Verovka (11) mines had several explosions within the period of one month which resulted in heavy casualties. There were also several lesser explosions, with few casualties. At Novo-Krinka there was an explosion in 1940 with small losses.
28. The explosions attained maximum force when the methane content was between 5.5 and 9.5 percent. It would not explode if the content was lower. However, it was difficult to establish exact limits, and it could also burn without exploding. The explosions could all be traced to defective screens on safety lamps, sparks caused by poor insulation of a locomotive body, or sparks from the controller of a cutting machine. In order to prevent future explosions, many repairs were made on the ventilating machinery. Also, in accordance with the instructions of the rules for safety, more air per ton of coal extracted was provided for ventilation after blastings. The air was calculated per man, and if there were horses, per horse. Each ventilating system, serving an entire mine, had to consist of two independent ventilators and motors. At some mines, which had not been modernized and removed from category I, the ventilating equipment consisted of one ventilator and two motors, one of which was a standby.
29. When the methane content reached 2%, miners were immediately removed from the mines. If any work was to be done in such mines at a future date, gas meters had to be installed.
30. Old style ventilators were replaced by more modern type that had a larger diameter causing stronger currents of air and greatly increasing the air pressure. Reconditioning of ventilators took place in all mines in categories #3 and #4.
31. Large amounts of water were always present after the snow melted in the spring. This condition was foreseen. Mines were equipped with three pumps, each capable of pumping out the surplus water within 20 hours. Two of the pumps, if worked simultaneously, could successfully handle the maximum extra flow. Normal procedure was to alternate the operation of two pumps while the third was held in reserve.
32. Water did not do much damage, although trouble occurred in some of the mines. A serious problem for the mine management staff was the control of the water level formed by water tight rocks, (the so-called phreatic horizon) from which the water flowed under the pressure of its own gravity and in great quantities. These underground springs would sometimes interrupt work completely. The Iosifovskiy seam of the Aleksandra-Zapad Mine (6) and the Verovka mine (11) were two of the mines where mining operations were disrupted.
33. A great deal of trouble was encountered in the exploitation of Mine #12 (72) of the Sorokanugol Trust, Kisilevka and the New Passage (Novo Prokhodka) in the Voroshilovskugol Trust. Sometimes the water came out on the lower side of a layer, e.g. when it met a weak shale, and forced its way through to form a sticky dirty mass. Where there was a clay shale ("lupak") interspersed with thin layers of other rocks, there "swelling" occurred, which often damaged the mine props as well as the tracks.

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34. All of the coal transported out of the Donets Basin went through concentrating and enriching plants before shipment. Mines #14 & 17 (122) produced coal to size, since they had a crusher and a sifter. When the coal was used by local industrial plants, they conditioned their own. Each local enterprise had its own tabling (stoly) and concentrating equipment. Many plants obtained a large percentage of ash and their complaints were answered with the statement, "we are still developing techniques". Quite a furor arose over ash content. Mines were ordered not to transport large quantities of worthless matter with the coal. Despite some remedies undertaken, there were frequent instances when the ash content reached 27 to 31 percent.
35. Coal allocations to mine employees depended on the season and according to the norm they had produced. During the summer each miner was allocated 20 to 30 puds (800 to 1200 pounds). In the spring and in the fall this was increased to 50 puds (1600 to 1800 pounds). The coal allocations were considered adequate from 1930 on because at that time firewood was also available and the 30 puds given each miner in the summer could be saved for winter use. After 1941 miners were given only 15, 20, or 25 puds during the summer and coal of a very low quality. Many miners then resorted to picking from the mine dumps.
36. Prices in 1937 were generally stable, from 30 to 45 rubles per ton. From 1937 to 1941, without any reason, some of the mines raised their prices to 150 rubles per ton. The carting of coal (30 puds) for a distance of 1.5 kilometers from Sofievka to Verovka, cost 10 rubles in 1937, 15 rubles in 1938, and 25 rubles in 1941. However, these prices applied only to workers living outside of the mining settlement.
37. Coal produced in the Donets Basin, which was not under the All-Union Ministry of Coal, amounted to about two or three per cent of the total. Technical control of non-Ministry mines was independent. The Ukrainian Ministry of Coal owned the Donugol Trust which managed all the mines of the Donbas. There were, however, many mines which Ukrainian towns had opened at their own expense. They profitted from technical advice from neighboring mines, or, if they had more funds, they engaged their own technical manager in which case there was also economic supervision. Such mines were located all over the Donbas but only in those places and seams where the Ministry of Heavy Industry was not interested in mining coal. An exception was made for the mines around the station Kuteynikovo. These mines were managed by the trusts of the heavy industries who wanted those mines completely exploited for their own benefits (production records).
38. All lifting equipment was raised by cables. It was raised by a lift with a bucket, a dump-car, a cage, skipcars, or a combination of cage and skipcar (when working on one shaft).
39. Most of the mines shipped coal without picking out waste rocks. Some of the bunkers (Kondrat'yevka (5), Rukhimovich (20), Aleksandra-Zapad (6) mines, and others) had crushers, which picked out stones; or the consumer himself cleaned the coal. Verovka (11) and Sofiyevka (10) had small link conveyors at the bunkers, which performed the cleaning. Marking was done to a certain extent where the breaking up was done, since it was impossible to do it when very dirty coal was raised. There was no washing of coal. Verovka and Sofiyevka had excellent washers that stood idle because of poor management. It also had a 14 to 17 ton movable screen and link and belt conveyors. Loading was done with the aid of dumpers, transporters, and in the case when coal piled up under a trestle, hand-barrows were used because there were not enough transporters.

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40. Further processing consisted of briquettes, produced whenever necessary. The mines "Bunge" and "Bryansk" were two such producers. When it was necessary to pulverize coal for furnaces with spray burners (such as at 'Don Soda') the plants would do the pulverizing using their own equipment.
41. The Gorloyka #1 mine (1) had its own equipment for producing benzol located near the mine yards.

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